

CLAIMS

Claims 1-51 (Canceled).

Claim 52 (Previously presented). A purified polypeptide having an amino acid sequence selected from the group consisting of: SEQ ID NO: 24, SEQ ID NO: 25, SEQ ID NO: 26, SEQ ID NO: 27, and SEQ ID NO: 28.

Claim 53 (Previously presented). The BS322 polypeptide of Claim 52, wherein said polypeptide is produced by recombinant techniques.

Claim 54 (Previously presented). The BS322 polypeptide of claim 52, wherein said polypeptide is produced by synthetic techniques.

Claim 55 (Previously presented). A test kit for determining if a BS322 antigen or antiBS322 antibody is present in a test sample, said kit comprising:
a container containing at least one BS322 polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO: 24, SEQ ID NO: 25, SEQ ID NO: 26, SEQ ID NO: 27, and SEQ ID NO: 28.

Claim 56 (Previously presented). The test kit of claim 55, wherein said BS322 polypeptide is attached to a solid phase.

Claim 57 (Previously presented). A method for detecting at least one antibody specific for a BS322 antigen in a test sample suspect of containing the antibody, said method comprising:

(a) contacting the test sample with a BS322 polypeptide for a time and under conditions sufficient to allow antigen/antibody complexes to form;
wherein said BS322 polypeptide contains at least one BS322 epitope derived from an amino acid sequence selected from the group consisting of SEQ

ID NO: 24, SEQ ID NO: 25, SEQ ID NO: 26, SEQ ID NO: 27, and SEQ ID NO: 28; and

(b) detecting the presence of said complexes as an indication of the antibody specific for the BS322 antigen.

Claim 58 (Previously presented). The method of claim 57, wherein said BS322 polypeptide is attached to a solid phase.

Claim 59 (Previously presented). The method of claim 57, wherein detection of said complexes is indicative of breast disease.

Claim 60 (Previously presented). A method for producing antibodies which specifically bind to a BS322 antigen, said method comprising:

administering to an individual an isolated immunogenic polypeptide in an amount sufficient to elicit an immune response.

wherein said immunogenic polypeptide comprises at least one BS322 epitope having an amino acid sequence selected from the group consisting of: SEQ ID NO: 24, SEQ ID NO: 25, SEQ ID NO: 26, SEQ ID NO: 27, and SEQ ID NO: 28.

Claim 61 (Previously presented). A method for producing antibodies which specifically bind to a BS322 antigen, comprising:

administering to an individual a plasmid,

wherein said plasmid comprises a sequence which encodes at least one BS322 epitope derived from a polypeptide having an amino acid sequence selected from the group consisting of SEQ ID NO: 24, SEQ ID NO: 25, SEQ ID NO: 26, SEQ ID NO: 27, SEQ ID NO: 28 and degenerate codon equivalents thereof.

Claims 62-68 (Canceled).

Claim 69 (Previously amended). The method of claim 57, wherein detection of said complexes is indicative of breast hypertrophic proliferation.

Claims 70-76 (Canceled).

Claim 77 (Previously presented). A method for detecting at least one specific antibody for a BS322 antigen in a test sample suspected of containing the antibody, said method comprising:

- (a) contacting the test sample with an isolated DNA molecule for a time and under conditions sufficient to allow antigen/antibody complexes to form, wherein the DNA molecule encodes at least one epitope derived from an amino acid sequence selected from the group consisting of: SEQ ID NOS: 24-28 and degenerate codon equivalents thereof; and
- (b) detecting the presence of said complexes as an indication of the antibody specific for the BS322 antigen.

Claim 78 (Previously presented). The method of claim 77, wherein the DNA molecule is attached to a solid phase.

Claim 79 (Previously presented). The method of claim 77, wherein detection of said complexes is indicative of breast cancer.

Claim 80 (Previously presented). A method for producing antibodies which specifically bind to BS322 antigen, comprising:

- administering to an individual an isolated immunogenic polypeptide in an amount sufficient to elicit an immune response,
- wherein said immunogenic polypeptide comprises an amino acid sequence selected from the group consisting of: SEQ ID NO: 24, SEQ ID NO: 25, SEQ ID NO: 26, SEQ ID NO: 27, and SEQ ID NO: 28.

Claim 81 (Previously presented). A method for producing antibodies which specifically bind to BS322 antigen, comprising:

administering to an individual a plasmid,

wherein said plasmid comprises a DNA molecule that encodes at least one BS322 epitope having an amino acid sequence selected from the group consisting of: SEQ ID NOS: 24-28 and degenerate codon equivalents thereof.